



Appendix B

RF Test Data for BLE (Conducted Measurement)

Product Name: Mobile Computer

Test Model: C7X

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan





B.1 6dB Bandwidth

Test Result

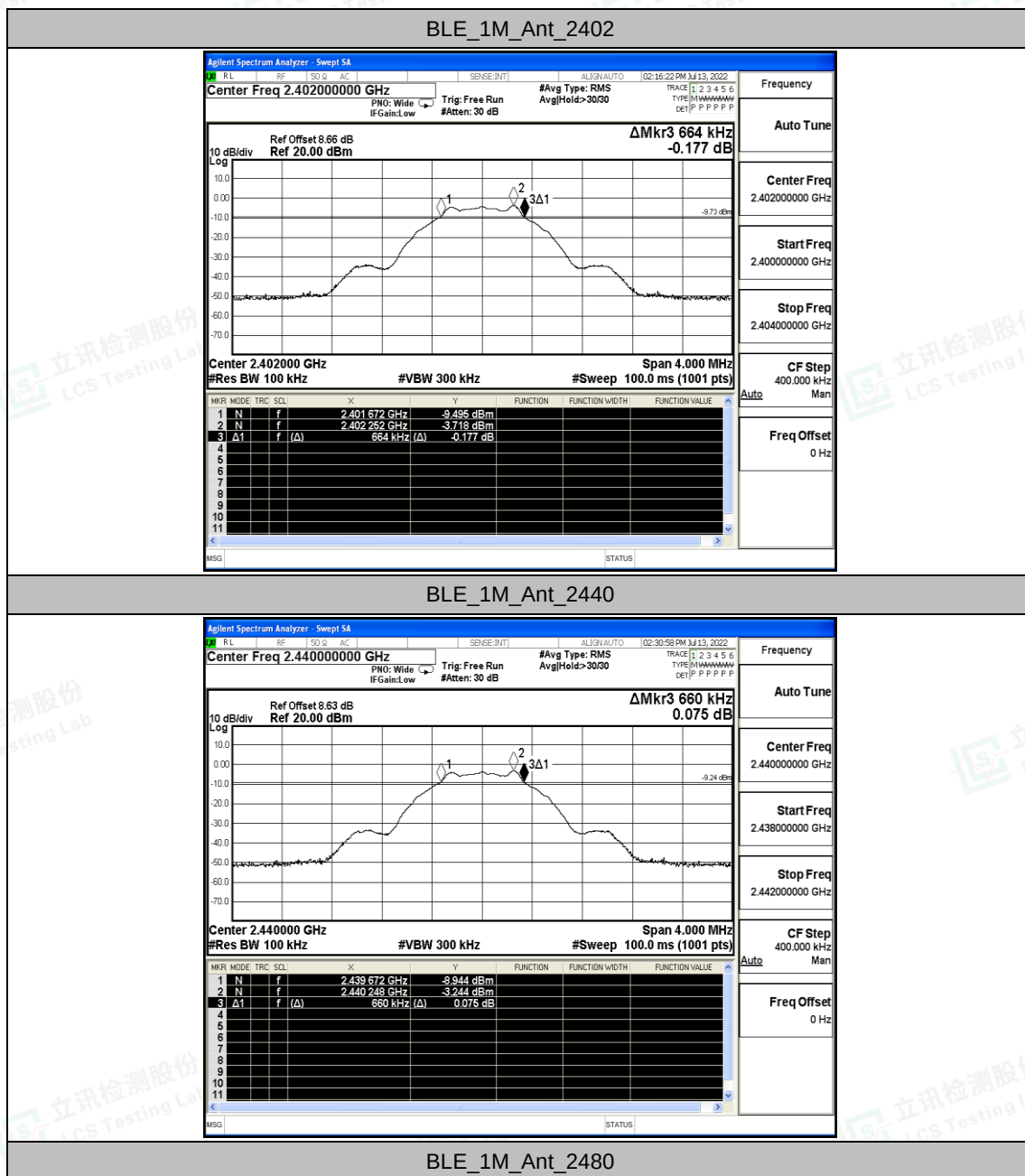
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant	2402	0.664	2401.672	2402.336	0.5	PASS
		2440	0.660	2439.672	2440.332	0.5	PASS
		2480	0.664	2479.672	2480.336	0.5	PASS
BLE_2M	Ant	2402	1.160	2401.428	2402.588	0.5	PASS
		2440	1.160	2439.428	2440.588	0.5	PASS
		2480	1.148	2479.436	2480.584	0.5	PASS



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Test Graphs

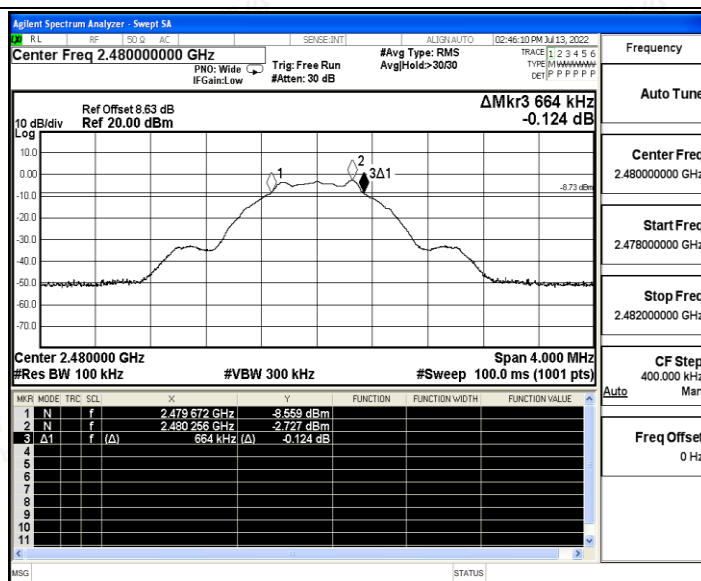


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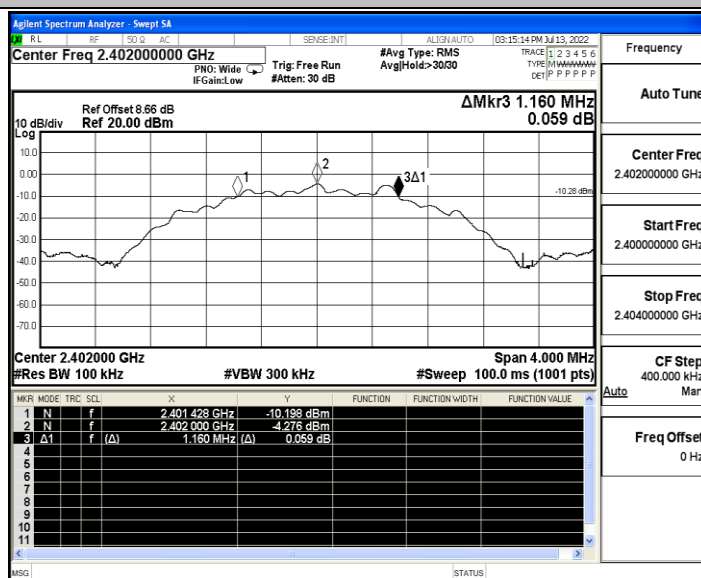
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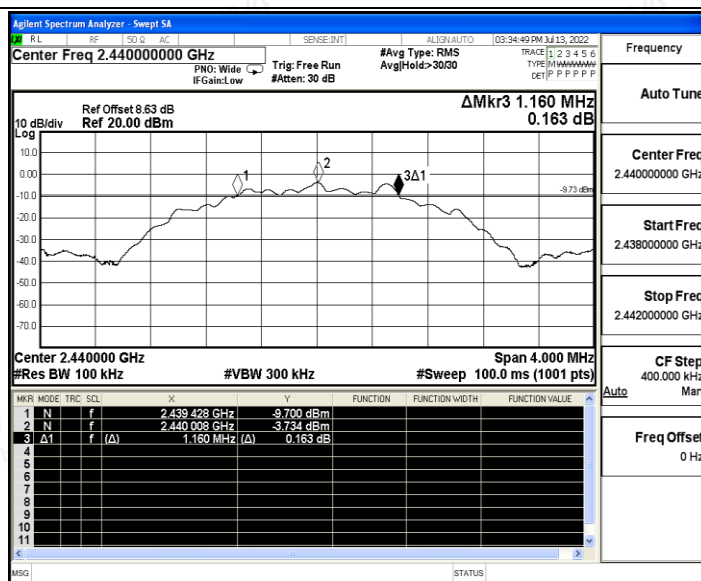


BLE_2M_Ant_2402

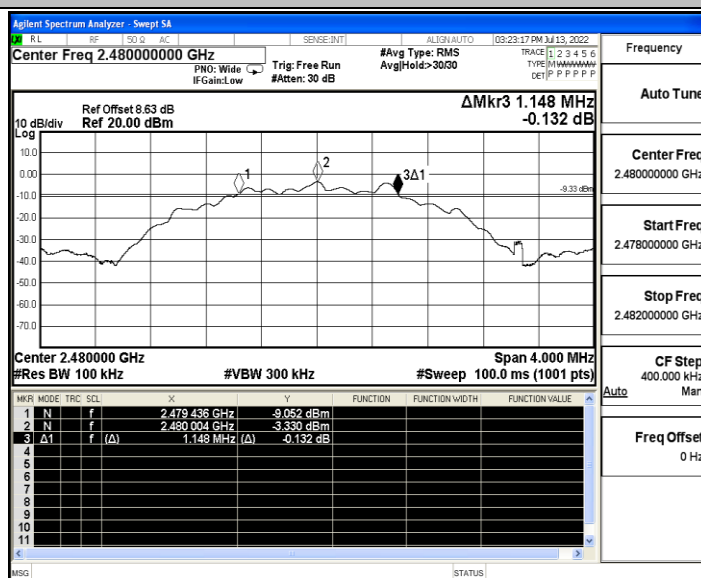


BLE_2M_Ant_2440





BLE_2M_Ant_2480



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B.2 Maximum conducted output power

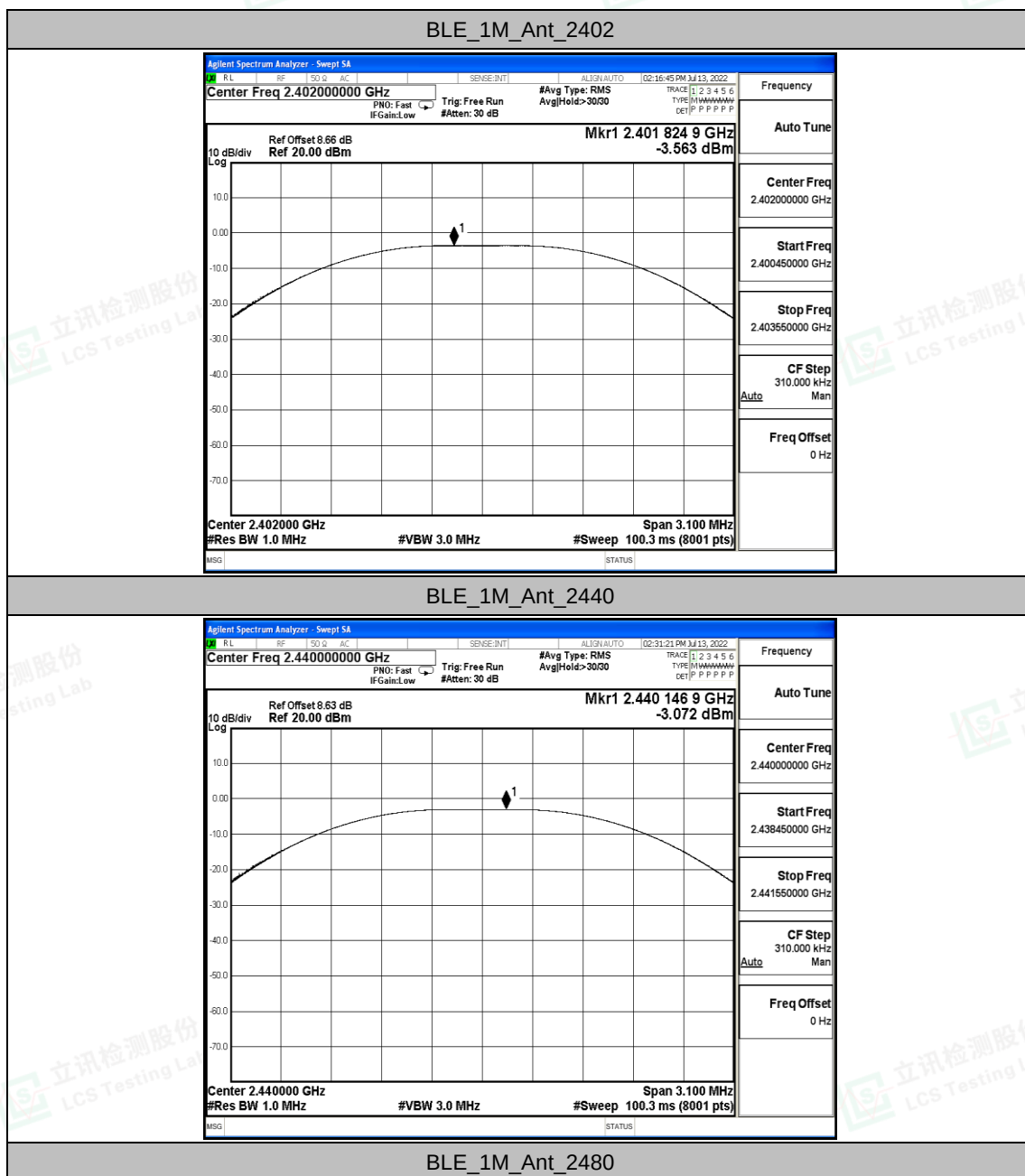
Test Result

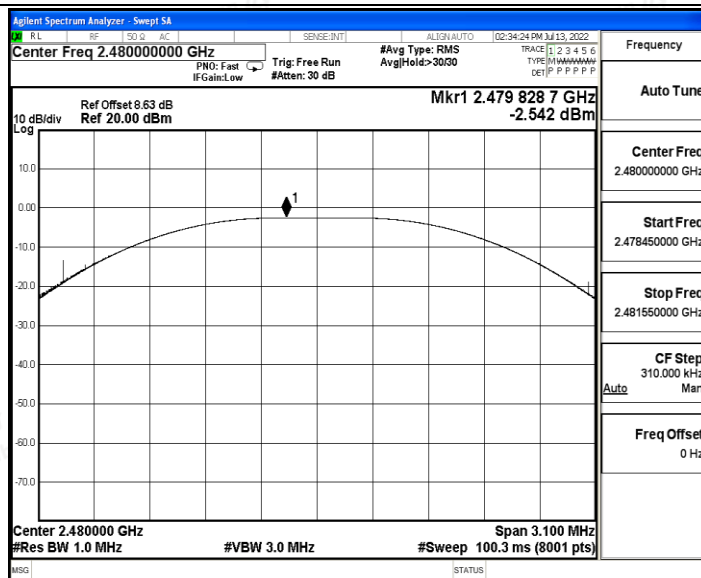
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant	2402	-3.56	≤30	PASS
		2440	-3.07	≤30	PASS
		2480	-2.54	≤30	PASS
BLE_2M	Ant	2402	-3.55	≤30	PASS
		2440	-3.09	≤30	PASS
		2480	-0.27	≤30	PASS



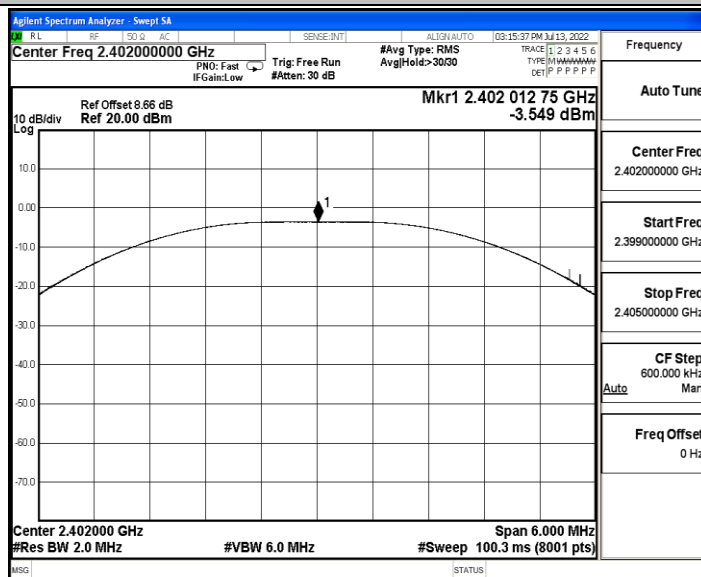


Test Graphs



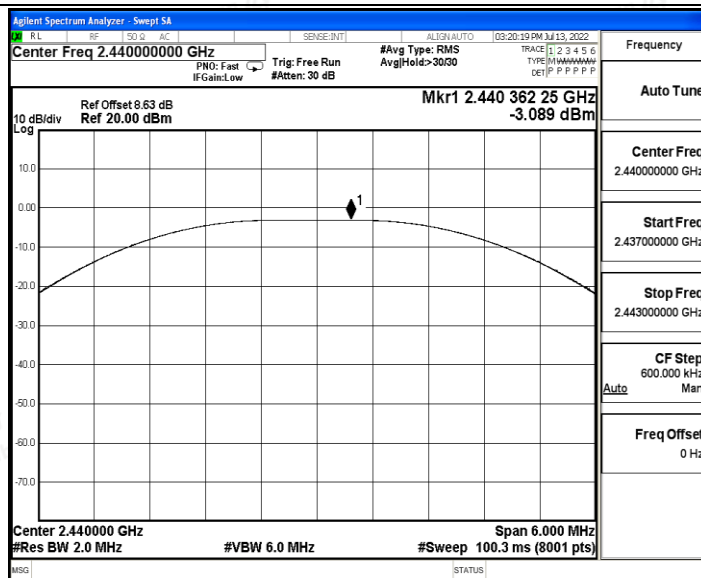


BLE_2M_Ant_2402

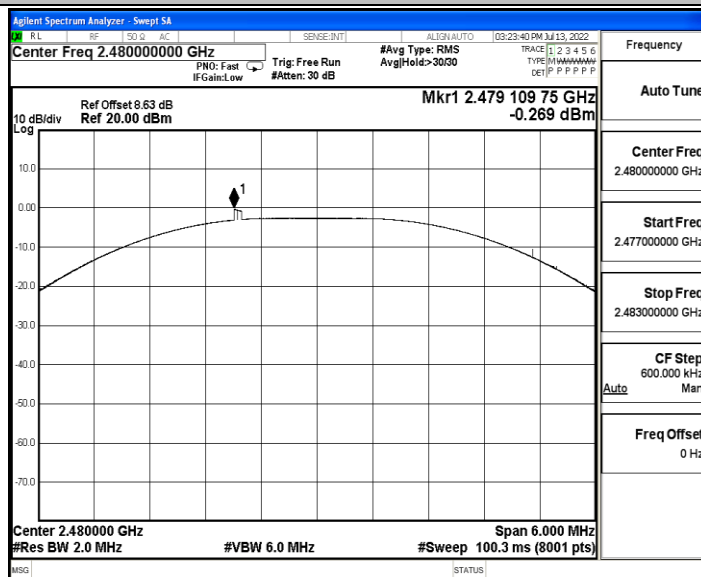


BLE_2M_Ant_2440





BLE_2M_Ant_2480





B.3 Maximum power spectral density

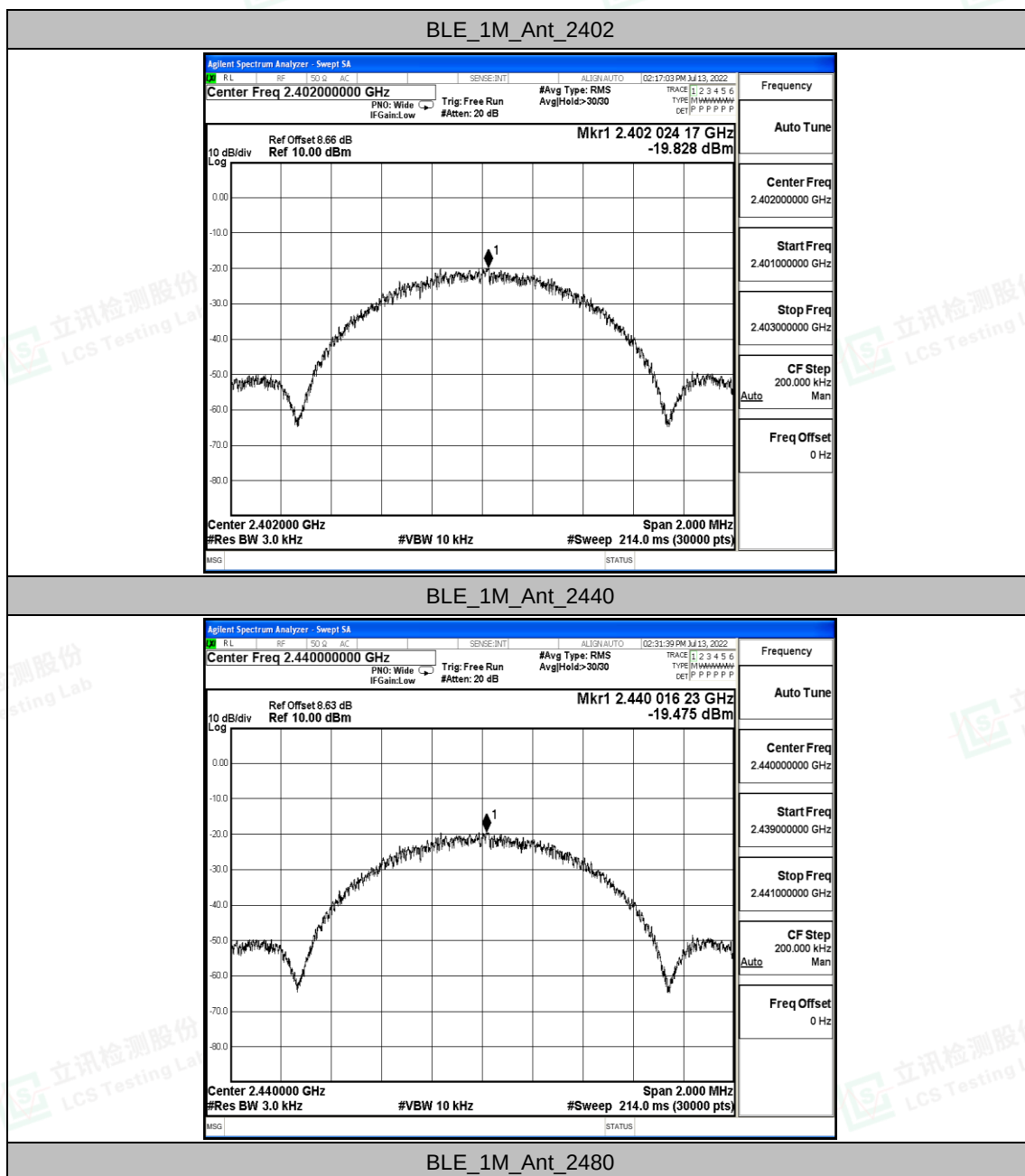
Test Result

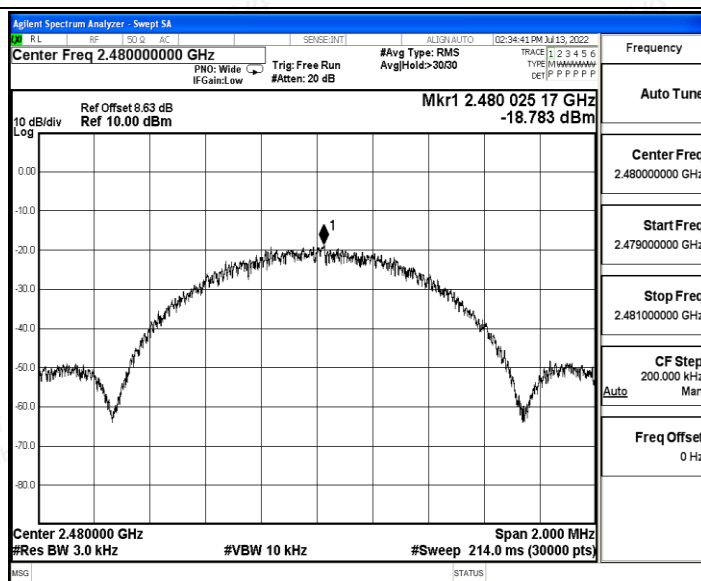
TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant	2402	-19.83	≤8.00	PASS
		2440	-19.48	≤8.00	PASS
		2480	-18.78	≤8.00	PASS
BLE_2M	Ant	2402	-22.02	≤8.00	PASS
		2440	-16.93	≤8.00	PASS
		2480	-21.18	≤8.00	PASS



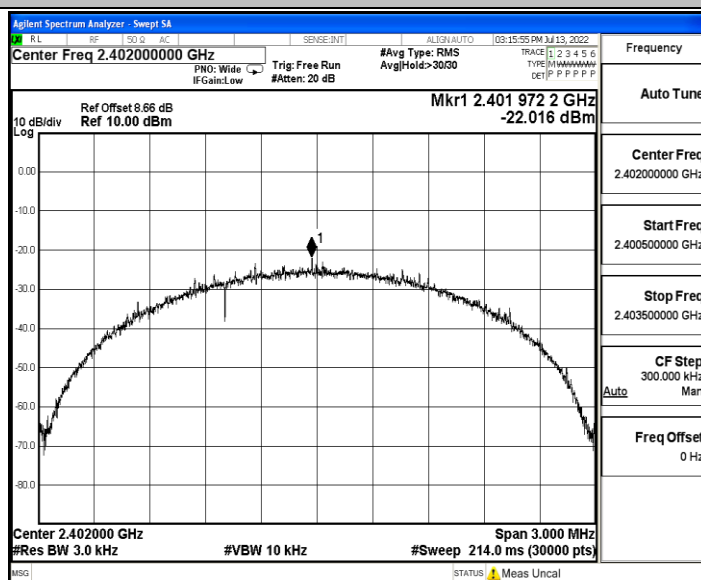


Test Graphs



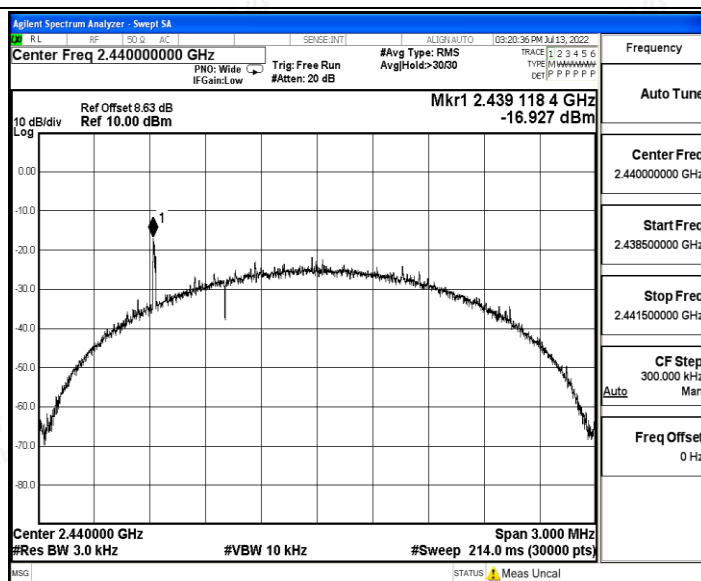


BLE_2M_Ant_2402

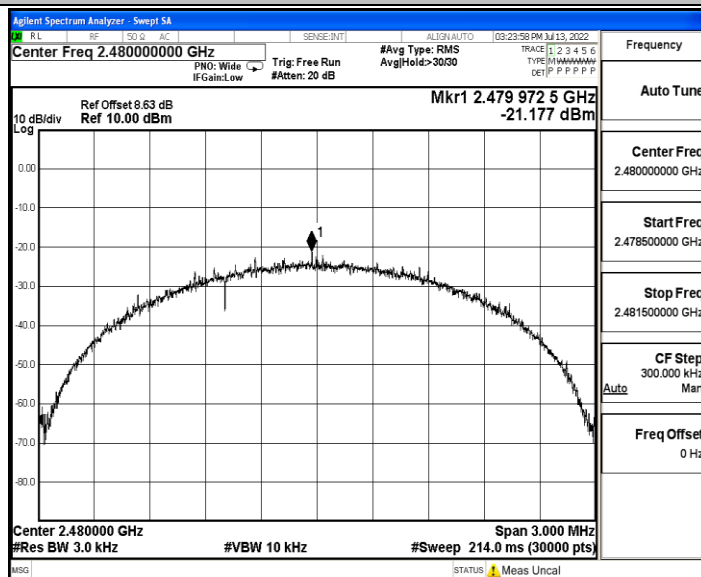


BLE_2M_Ant_2440





BLE_2M_Ant_2480



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B.4 Band edge measurements

Test Result

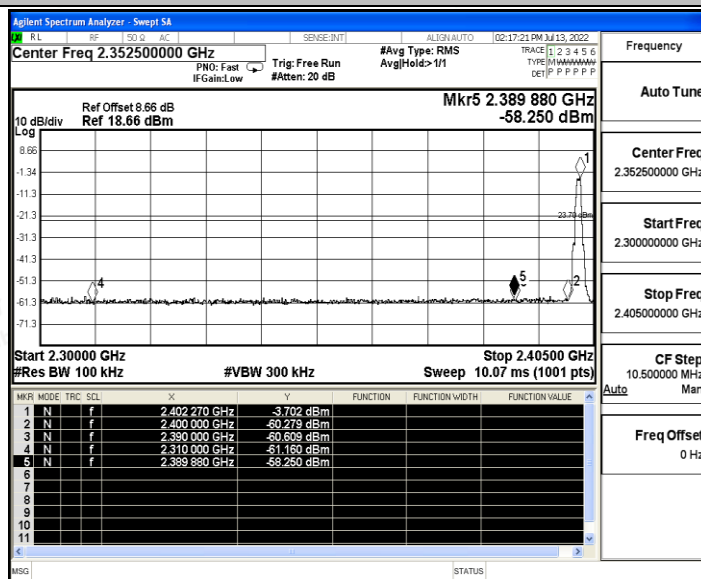
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant	Low	2402	-3.70	-58.25	≤-23.7	PASS
		High	2480	-2.76	-57.09	≤-22.76	PASS
BLE_2M	Ant	Low	2402	-4.68	-35.1	≤-24.68	PASS
		High	2480	-3.27	-57.54	≤-23.27	PASS



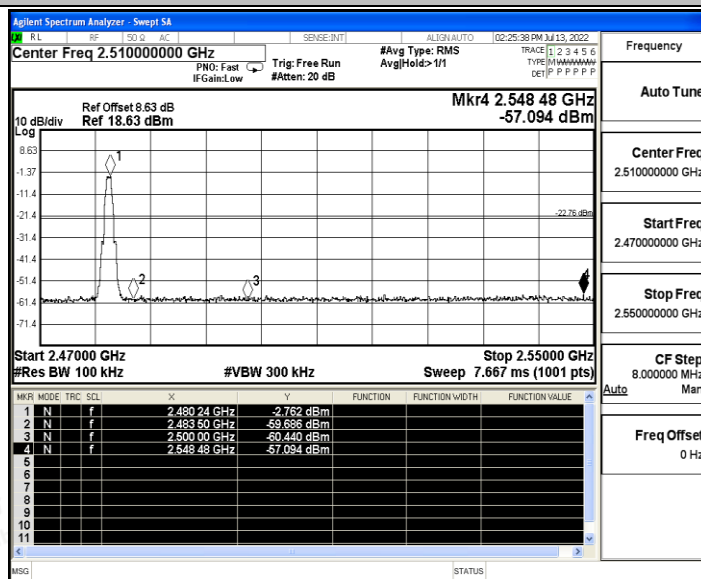


Test Graphs

BLE_1M_Ant_Low_2402



BLE_1M_Ant_High_2480



BLE_2M_Ant_Low_2402

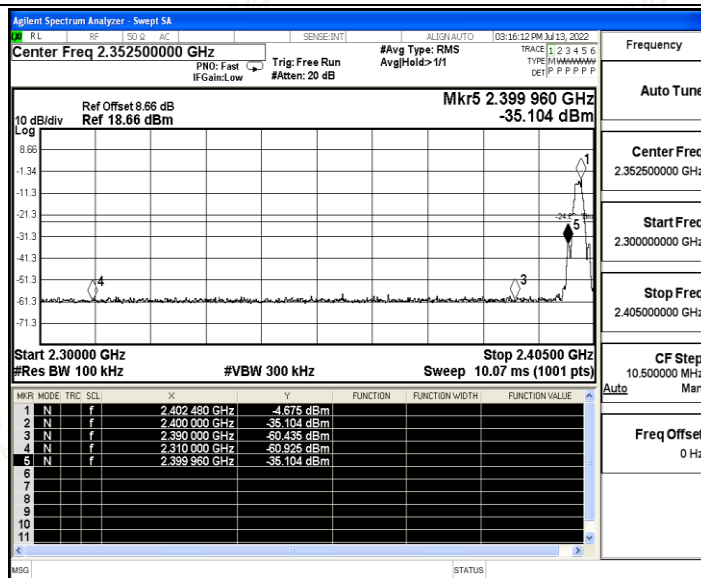


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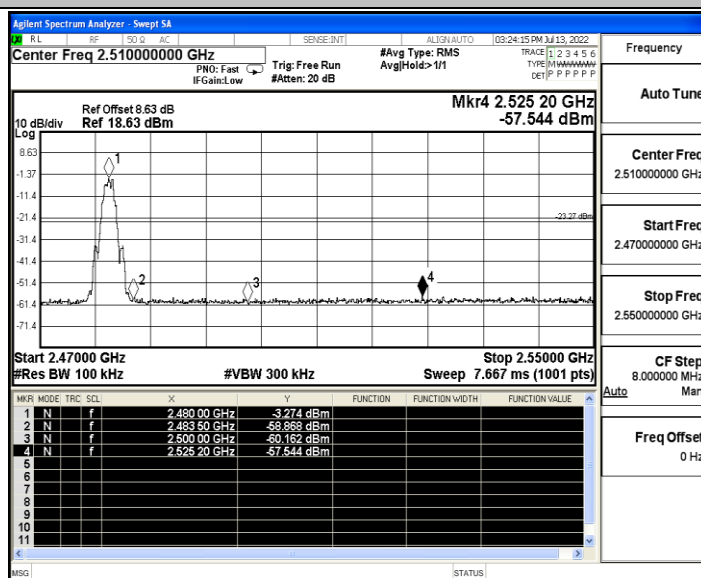
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BLE_2M_Ant_High_2480





B.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant	2402	Reference	-3.82	-3.82	---	PASS
			30~1000	-3.82	-47.41	≤-23.82	PASS
			1000~26500	-3.82	-45.54	≤-23.82	PASS
		2440	Reference	-3.21	-3.21	---	PASS
			30~1000	-3.21	-47	≤-23.21	PASS
			1000~26500	-3.21	-45.86	≤-23.21	PASS
		2480	Reference	-3.07	-3.07	---	PASS
			30~1000	-3.07	-47.97	≤-23.07	PASS
			1000~26500	-3.07	-45.41	≤-23.07	PASS
BLE_2M	Ant	2402	Reference	-4.27	-4.27	---	PASS
			30~1000	-4.27	-47.34	≤-24.27	PASS
			1000~26500	-4.27	-45.61	≤-24.27	PASS
		2440	Reference	-3.84	-3.84	---	PASS
			30~1000	-3.84	-48.34	≤-23.84	PASS
			1000~26500	-3.84	-45.54	≤-23.84	PASS
		2480	Reference	-3.32	-3.32	---	PASS
			30~1000	-3.32	-48.3	≤-23.32	PASS
			1000~26500	-3.32	-46.18	≤-23.32	PASS



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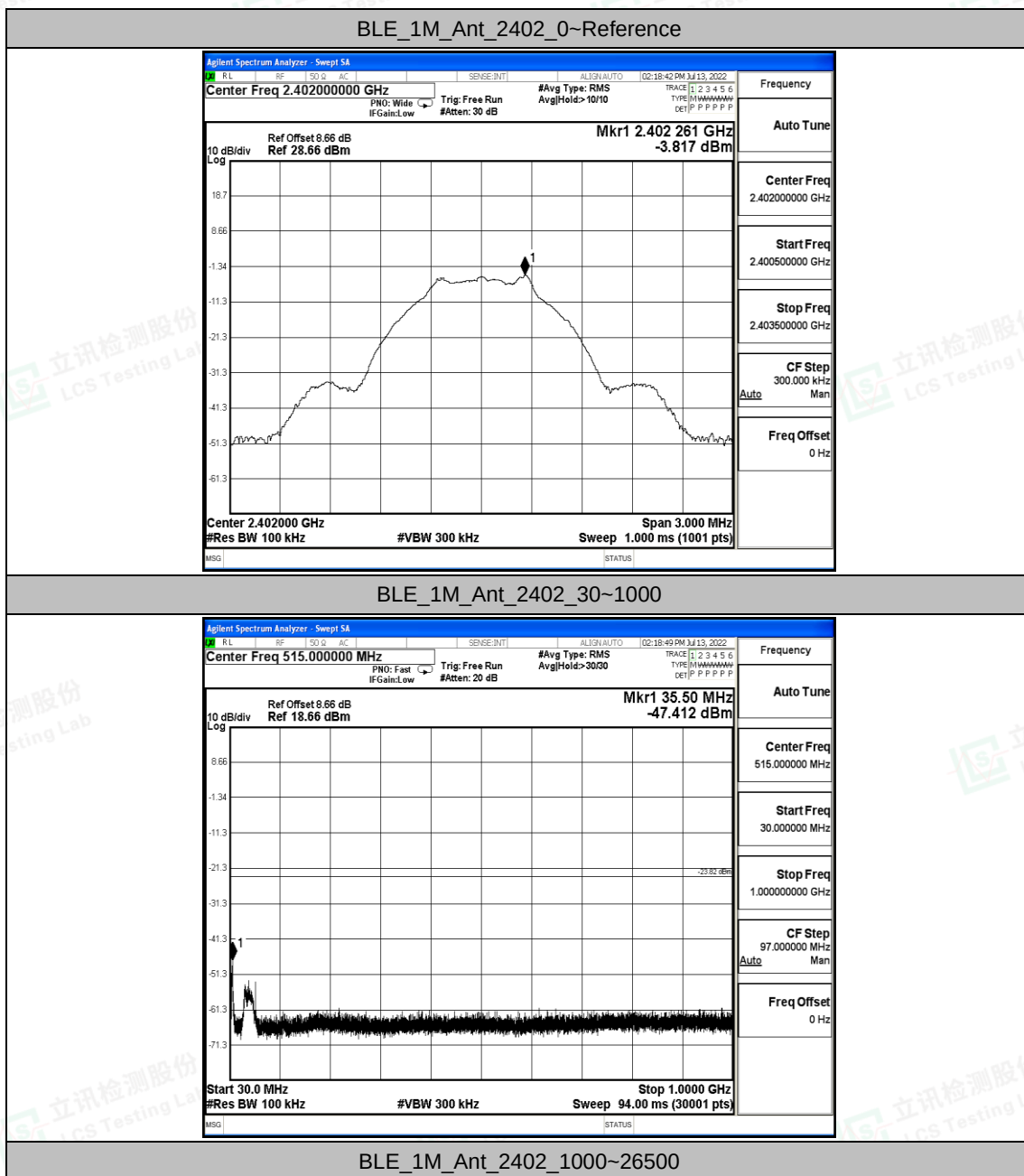
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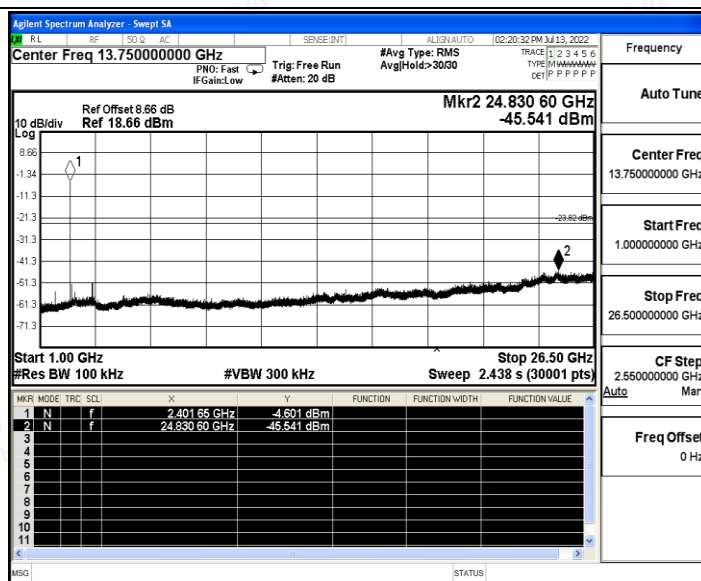
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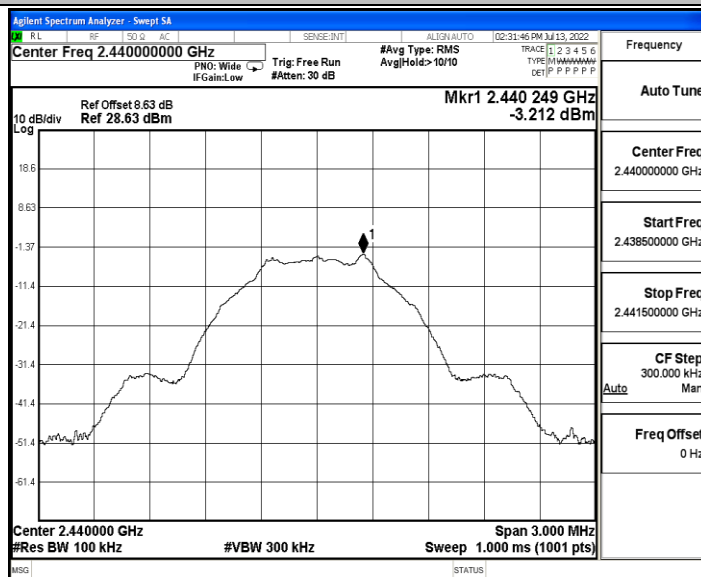


Test Graphs





BLE_1M_Ant_2440_0~Reference



BLE_1M_Ant_2440_30~1000

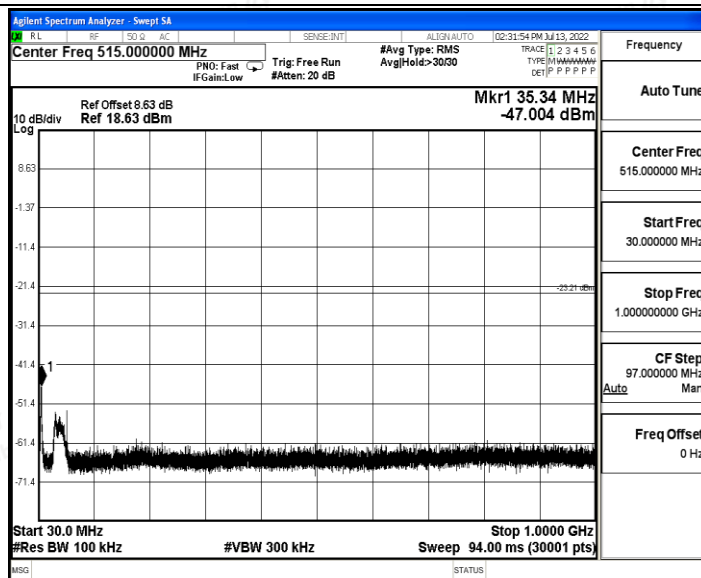


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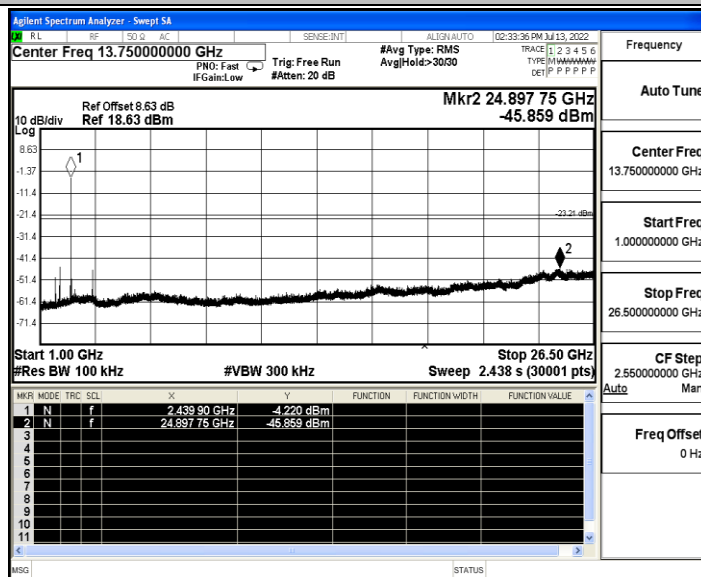
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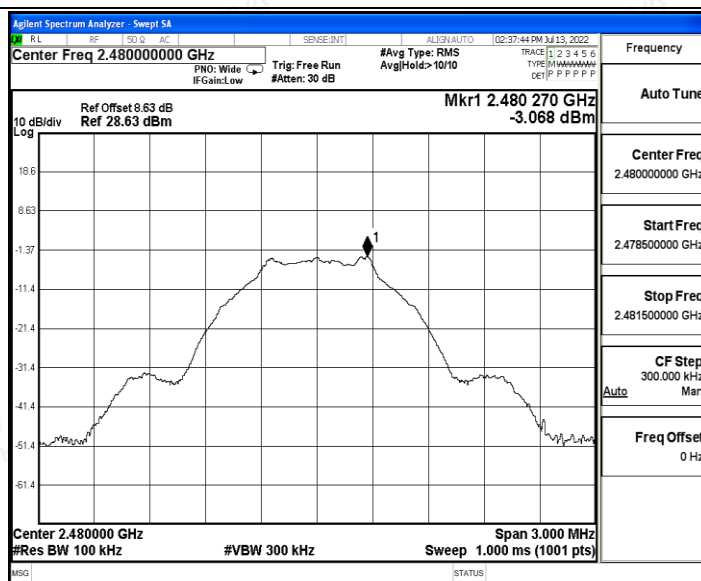


BLE_1M_Ant_2440_1000~26500

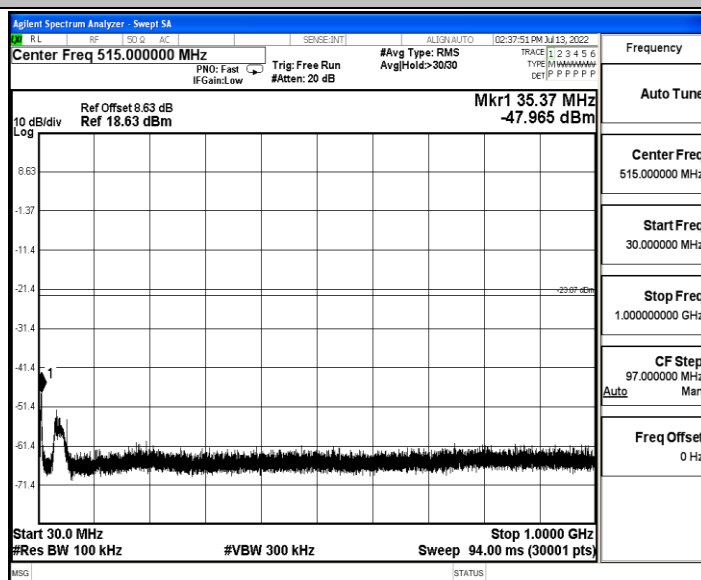


BLE_1M_Ant_2480_0~Reference





BLE_1M_Ant_2480_30~1000



BLE_1M_Ant_2480_1000~26500

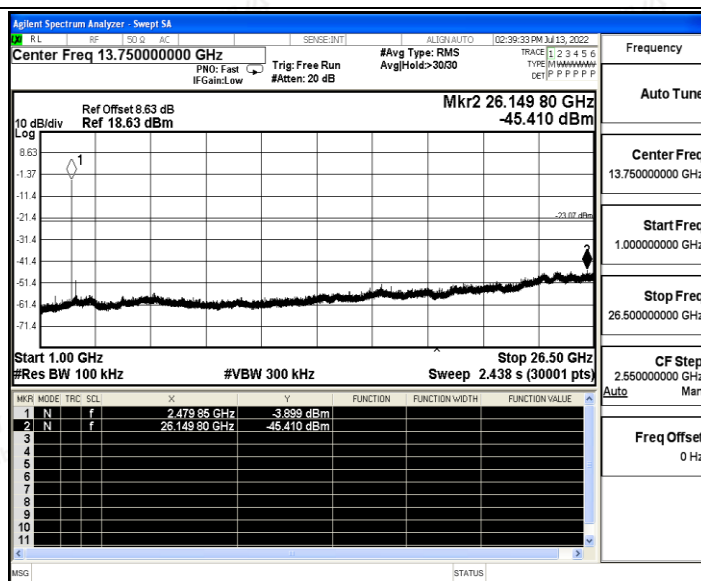


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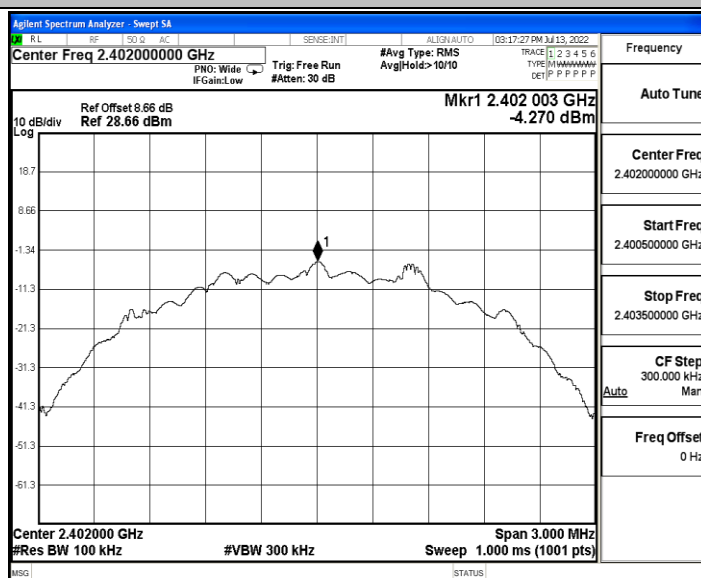
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BLE_2M_Ant_2402_0~Reference



BLE_2M_Ant_2402_30~1000

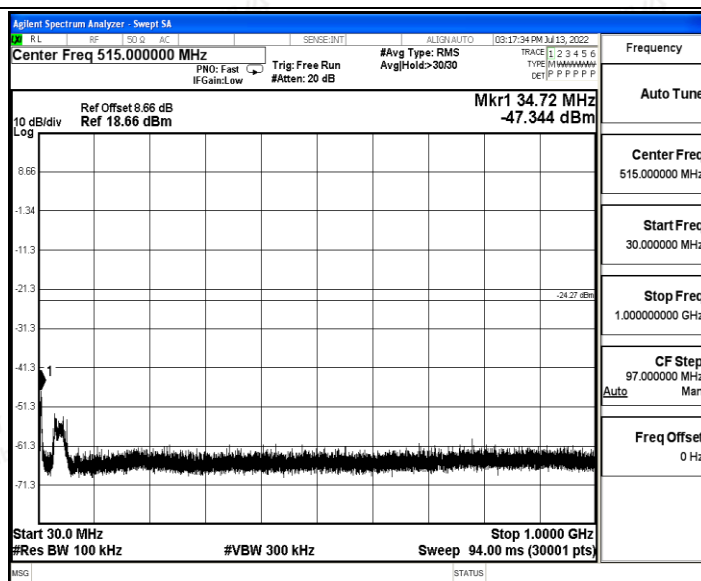


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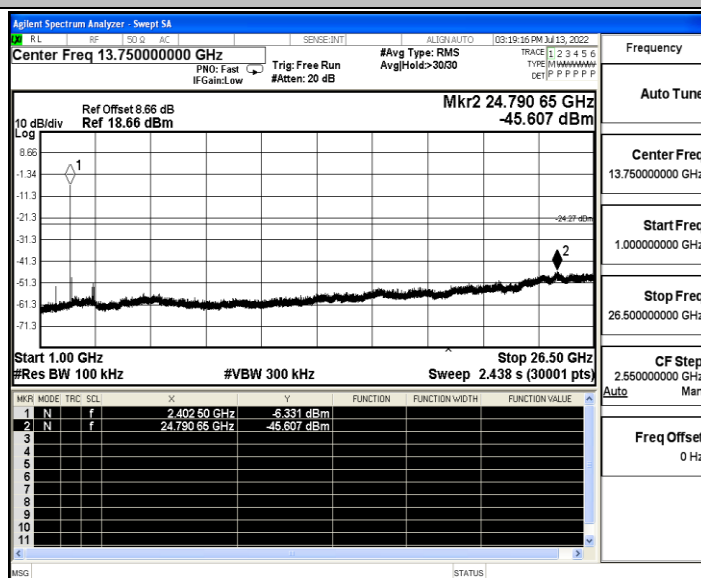
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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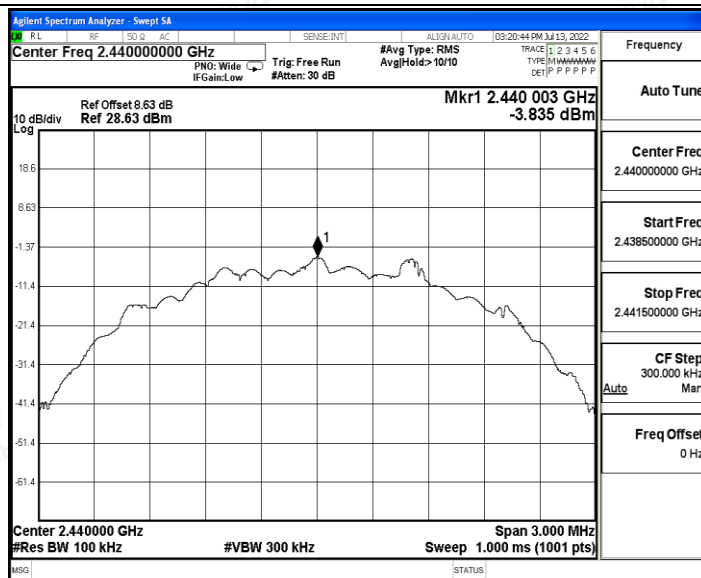


BLE_2M_Ant_2402_1000~26500

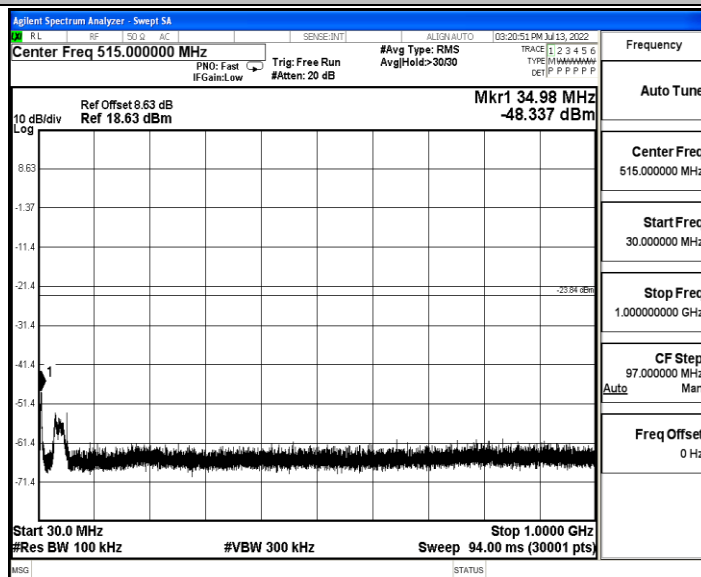


BLE_2M_Ant_2440_0~Reference



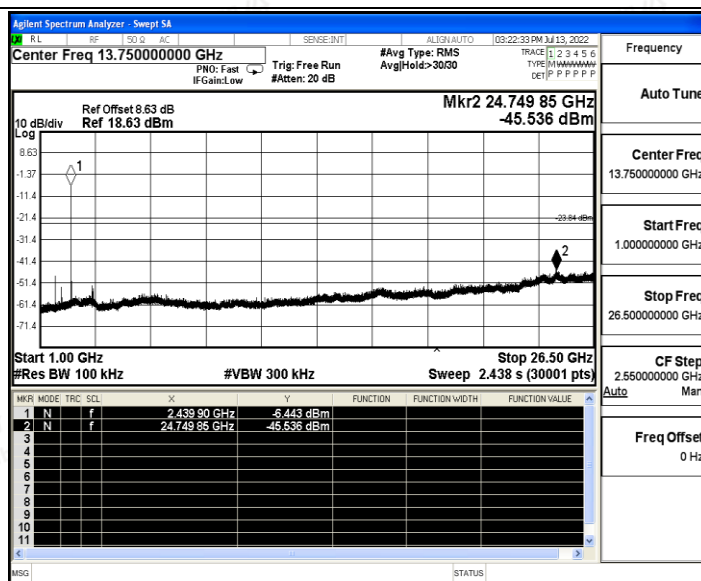


BLE_2M_Ant_2440_30~1000

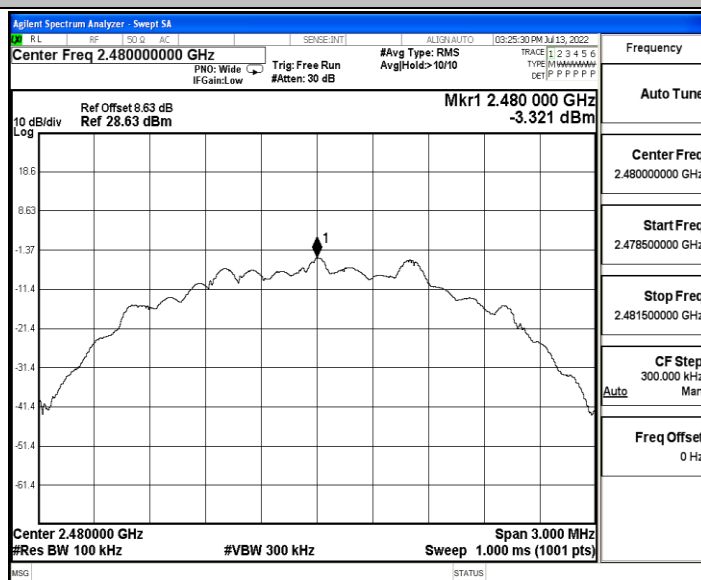


BLE_2M_Ant_2440_1000~26500





BLE_2M_Ant_2480_0~Reference



BLE_2M_Ant_2480_30~1000

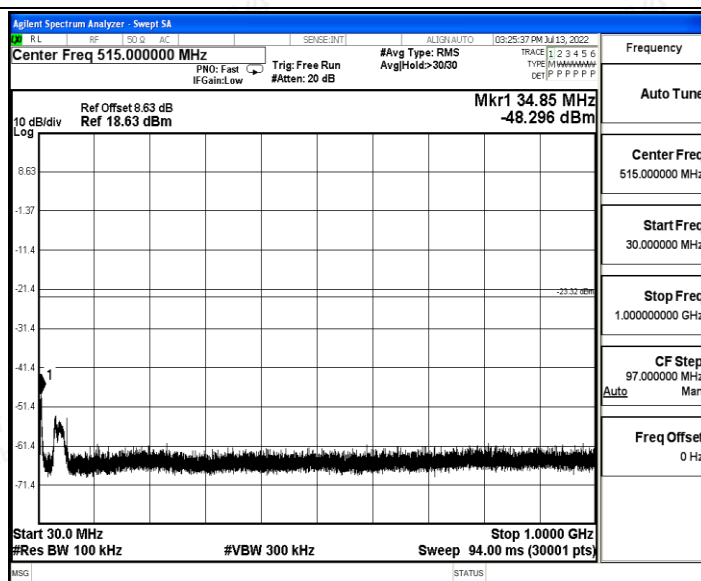


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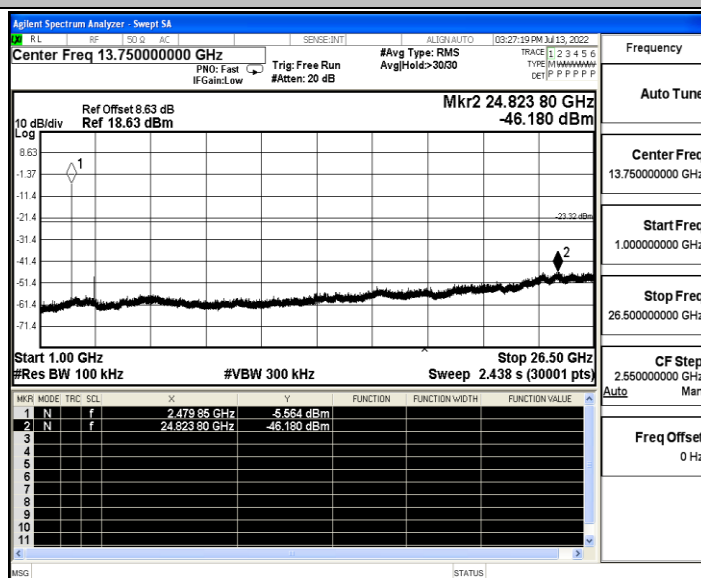
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BLE_2M_Ant_2480_1000~26500





B.6 Duty Cycle

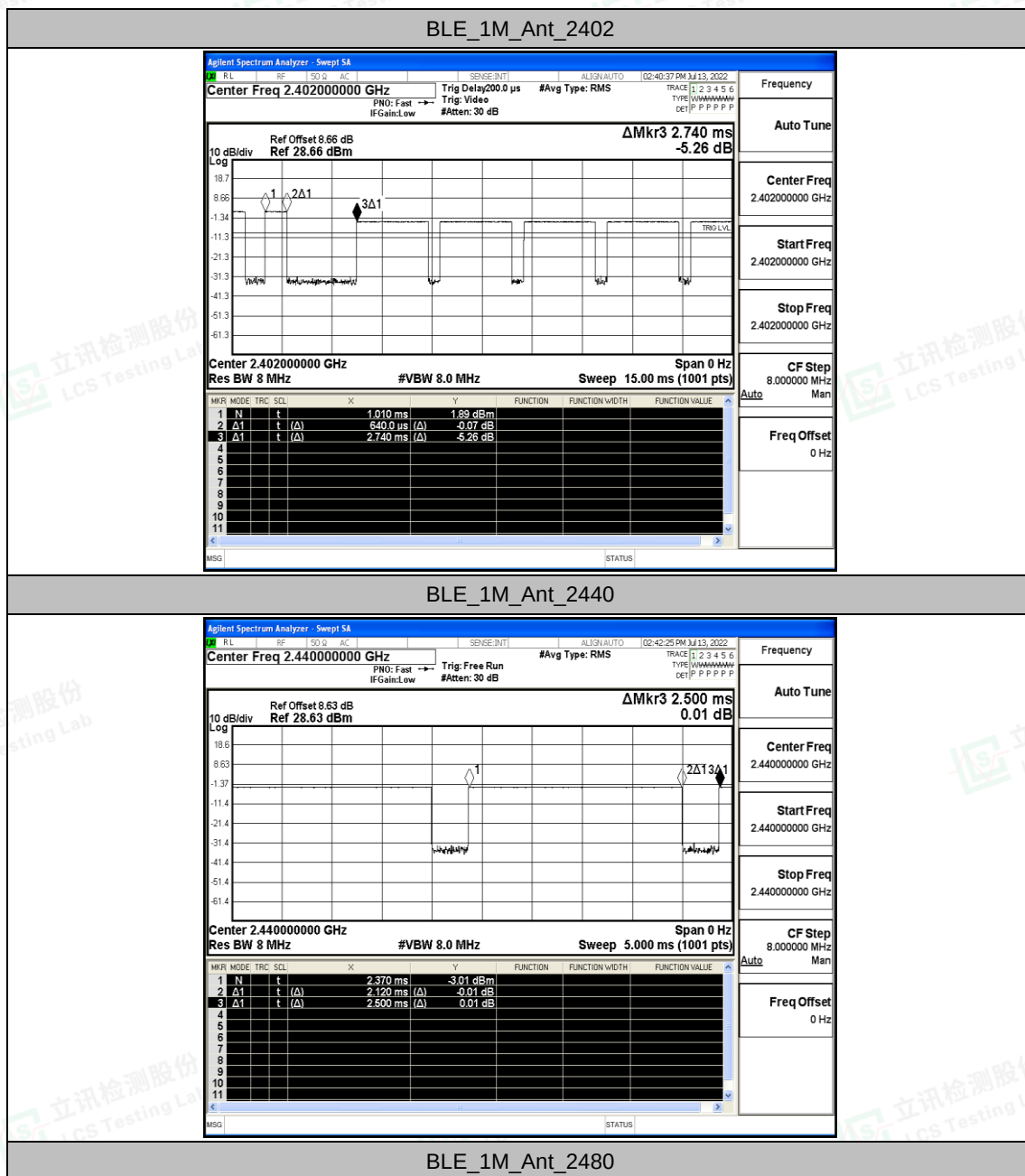
Test Result

TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	1/T	Limit	Verdict
BLE_1M	Ant	2402	0.64	2.74	0.2336	23.36	6.32	1.56	---	---
		2440	2.12	2.50	0.8480	84.80	0.72	0.47	---	---
		2480	2.13	2.50	0.8520	85.20	0.70	0.47	---	---
BLE_2M	Ant	2402	0.66	2.01	0.3284	32.84	4.84	1.52	---	---
		2440	0.66	2.31	0.2857	28.57	5.44	1.52	---	---
		2480	1.07	1.88	0.5691	56.91	2.45	0.93	---	---





Test Graphs

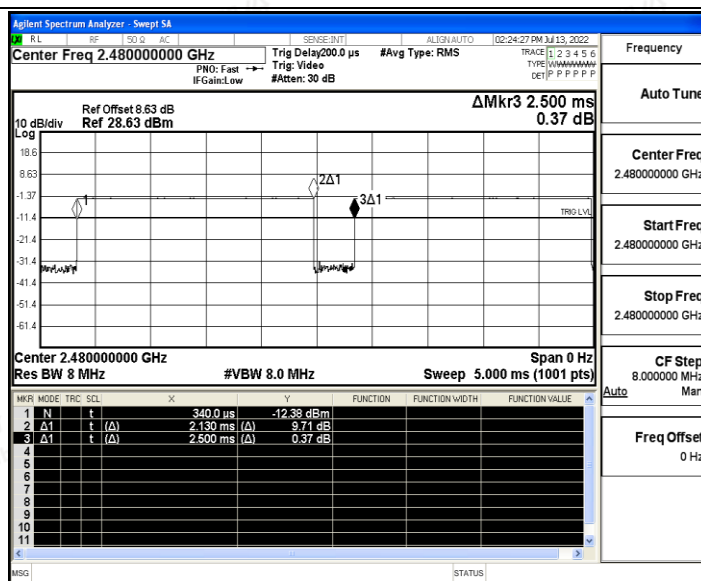


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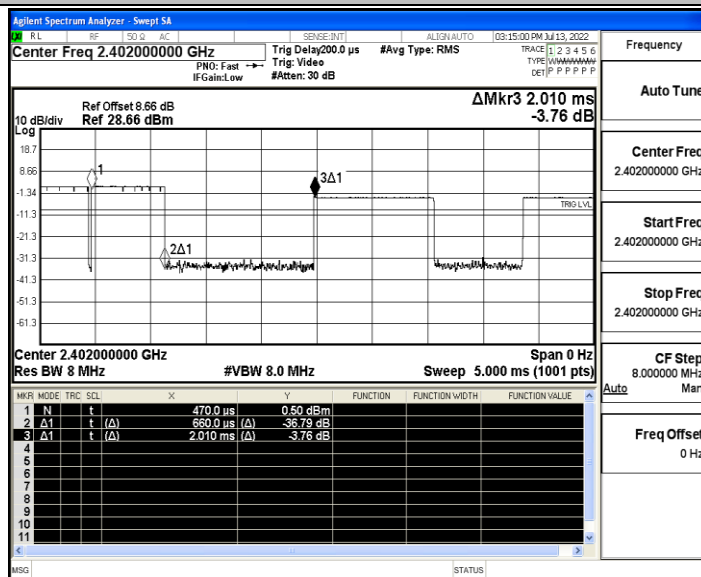
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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BLE_2M_Ant_2402



BLE_2M_Ant_2440

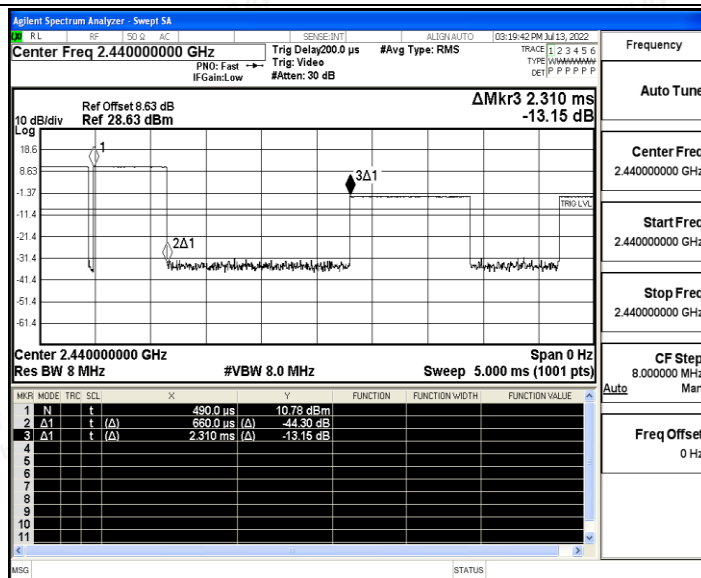


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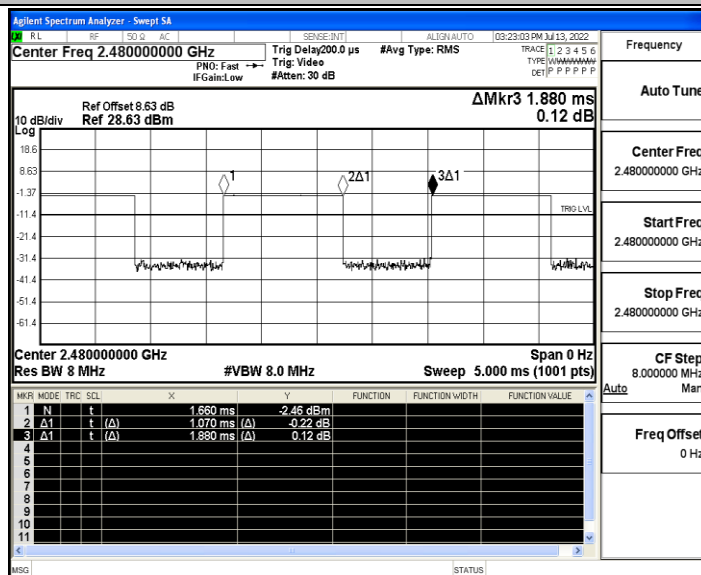
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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BLE_2M_Ant_2480



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B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant	Low	2402	AV	2310.000	-57.85	≤-41.20	37.35	≤54	PASS
				AV	2387.360	-57.29	≤-41.20	37.91	≤54	PASS
				AV	2390.000	-57.47	≤-41.20	37.73	≤54	PASS
				Peak	2310.000	-47.3	≤-21.20	47.90	≤74	PASS
				Peak	2323.835	-45.81	≤-21.20	49.39	≤74	PASS
				Peak	2390.000	-48.17	≤-21.20	47.03	≤74	PASS
		High	2480	AV	2483.500	-55.09	≤-41.20	40.11	≤54	PASS
				AV	2483.520	-55.09	≤-41.20	40.11	≤54	PASS
				AV	2500.000	-56.85	≤-41.20	38.35	≤54	PASS
				Peak	2483.500	-46.47	≤-21.20	48.73	≤74	PASS
				Peak	2495.760	-45.7	≤-21.20	49.50	≤74	PASS
				Peak	2500.000	-47.66	≤-21.20	47.54	≤74	PASS
BLE_2M	Ant	Low	2402	AV	2310.000	-57.48	≤-41.20	37.72	≤54	PASS
				AV	2374.130	-56.75	≤-41.20	38.45	≤54	PASS
				AV	2390.000	-57	≤-41.20	38.20	≤54	PASS
				Peak	2310.000	-48.53	≤-21.20	46.67	≤74	PASS
				Peak	2366.360	-46.43	≤-21.20	48.77	≤74	PASS
				Peak	2390.000	-48.06	≤-21.20	47.14	≤74	PASS
		High	2480	AV	2483.500	-51.3	≤-41.20	43.90	≤54	PASS
				AV	2483.520	-51.3	≤-41.20	43.90	≤54	PASS
				AV	2500.000	-56.73	≤-41.20	38.47	≤54	PASS
				Peak	2483.500	-45.15	≤-21.20	50.05	≤74	PASS
				Peak	2483.520	-45.15	≤-21.20	50.05	≤74	PASS
				Peak	2500.000	-46.91	≤-21.20	48.29	≤74	PASS

Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.





Test Graphs

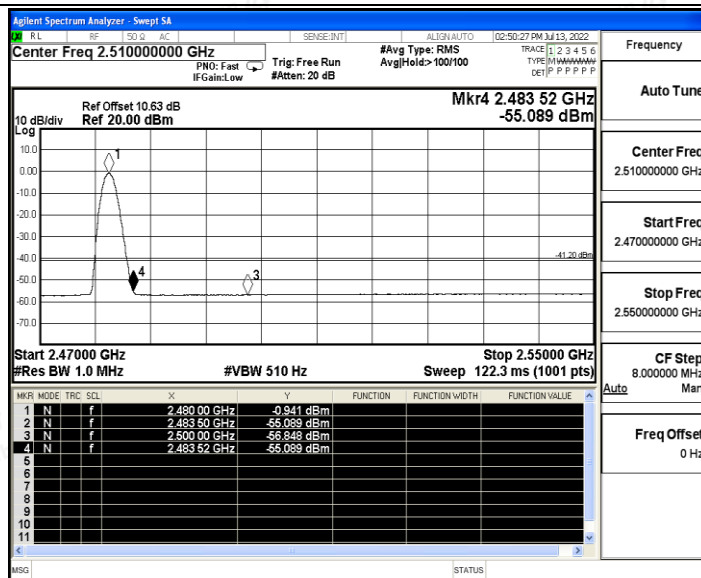


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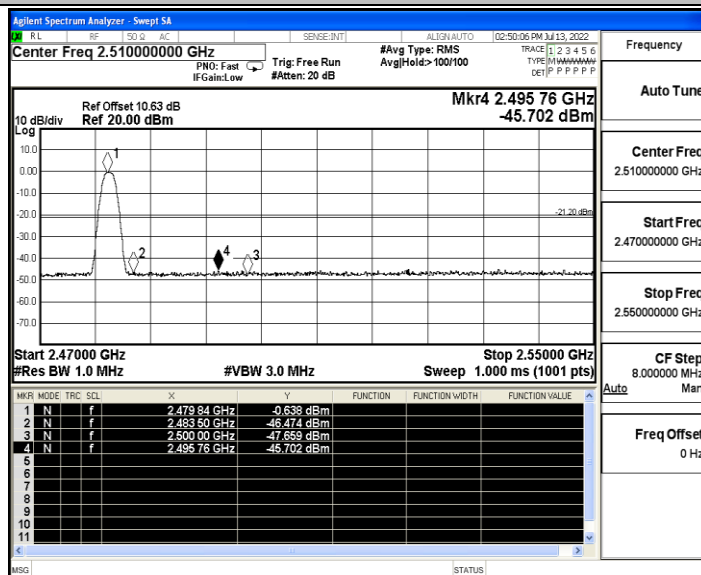
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BLE_1M_Ant_High_2480_Peak



BLE_2M_Ant_Low_2402_AV

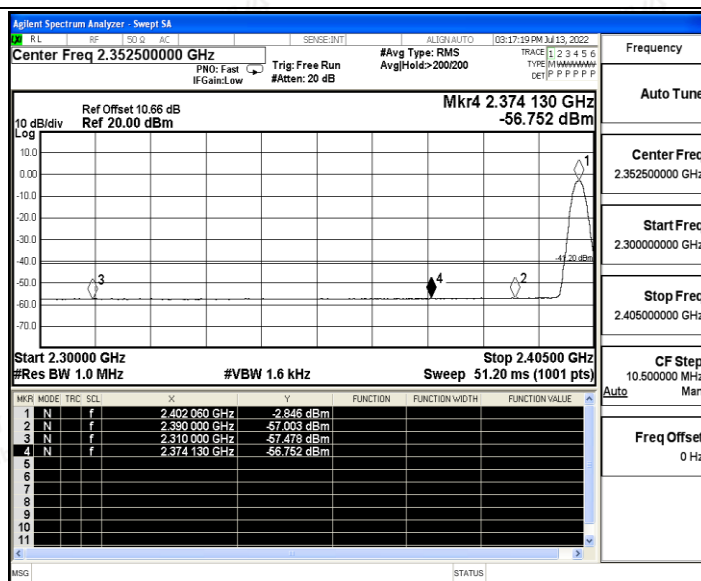


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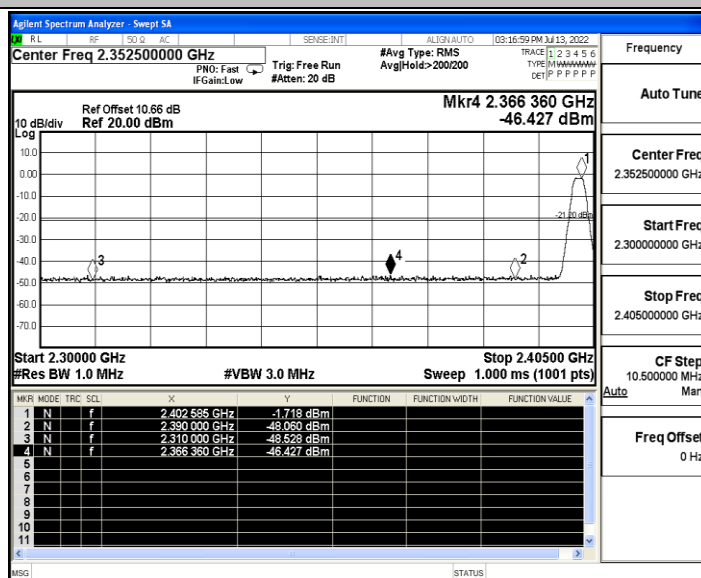
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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BLE_2M_Ant_Low_2402_Peak



BLE_2M_Ant_High_2480_AV

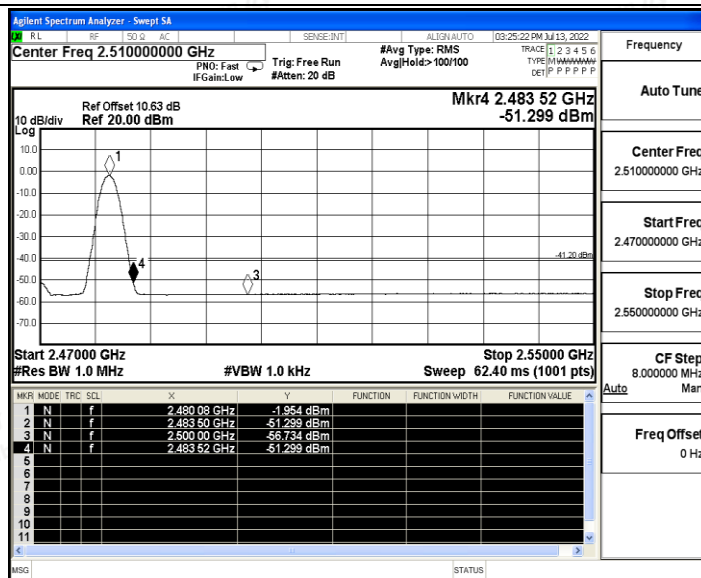


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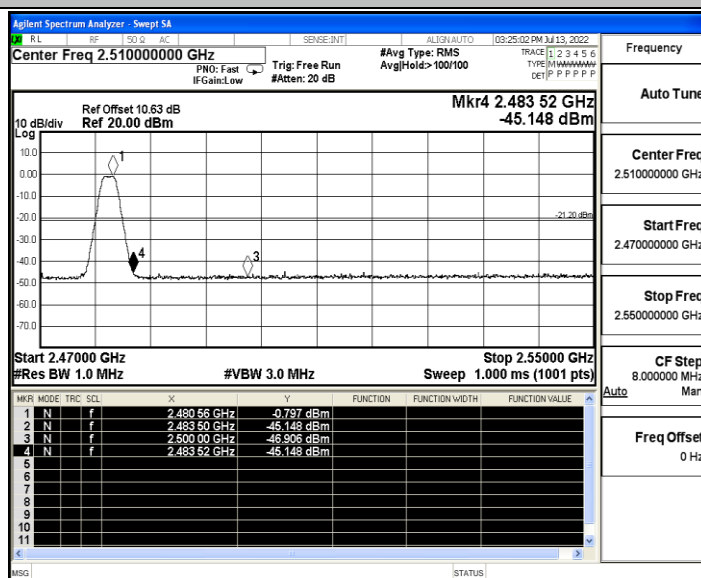
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BLE_2M_Ant_High_2480_Peak



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